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Before the  
Federal Communications Commission  
Washington, D.C. 20554

FEB 18 2009

FCC Mail Room

In the Matter of:

Petition for Rulemaking to Amend  
the Land Mobile-TV Sharing Rules  
in the 470-512 MHz Band

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**PETITION FOR RULEMAKING BY  
THE NATIONAL PUBLIC SAFETY TELECOMMUNICATIONS COUNCIL**

The National Public Safety Telecommunications Council (NPSTC) submits this Petition for Rulemaking recommending that the Commission amend its rules which address land mobile/television sharing criteria in the 470-512 MHz band. The current rules were adopted over 35 years ago based on analog television receiver performance at that time. The transition from analog to digital television (DTV), scheduled to be completed by June 12, 2009, provides the opportunity to amend the rules to provide greater flexibility in the eleven markets where land mobile sharing is allowed. As digital receivers are less susceptible to interference than analog receivers, NPSTC's recommended rule changes can be implemented without negatively impacting television viewing. The result of such modifications will provide significant benefits to public safety and other land mobile users of the band and allow more efficient use of the scarce spectrum resource.

No. of Copies rec'd 093  
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## **The National Public Safety Telecommunications Council**

The National Public Safety Telecommunications Council (NPSTC) is a federation of public safety organizations whose mission is to improve public safety communications and interoperability through collaborative leadership. NPSTC pursues the role of resource and advocate for public safety organizations in the United States on matters relating to public safety telecommunications. NPSTC has promoted implementation of the Public Safety Wireless Advisory Committee (PSWAC) and the 700 MHz Public Safety National Coordination Committee (NCC) recommendations. NPSTC explores technologies and public policy involving public safety telecommunications, analyzes the ramifications of particular issues and submits comments to governmental bodies with the objective of furthering public safety telecommunications worldwide. NPSTC serves as a standing forum for the exchange of ideas and information for effective public safety telecommunications.

The following 15 organizations participate in NPSTC:

American Association of State Highway and Transportation Officials  
American Radio Relay League  
Association of Fish and Wildlife Agencies  
Association of Public-Safety Communications Officials-International  
Forestry Conservation Communications Association  
International Association of Chiefs of Police  
International Association of Emergency Managers  
International Association of Fire Chiefs  
International Municipal Signal Association  
National Association of State Chief Information Officers  
National Association of State Emergency Medical Services Officials  
National Association of State Foresters  
National Association of State Technology Directors  
National Emergency Number Association  
National Sheriffs' Association

Several federal agencies are liaison members of NPSTC. These include the Department of Homeland Security (the Federal Emergency Management Agency, the Office of Emergency

Communications, the Office of Interoperability and Compatibility, and the SAFECOM Program); Department of Commerce (National Telecommunications and Information Administration); Department of the Interior; and the Department of Justice (National Institute of Justice, CommTech Program). NPSTC has liaison relationships with associate members, the Telecommunications Industry Association and the Canadian Interoperability Technology Interest Group.

### **The 470-512 MHz Band**

The Commission opened the 470-512 MHz band, i.e., television channels 14 through 20 for land mobile sharing in 1971 in Docket 18261. The basic land mobile/television sharing criteria in this band has remained unchanged for over 35 years and is governed under Subpart L of Part 90 of the Commission rules. Only by waivers has the public safety community obtained additional flexibility. This band supports lifeline public safety mission critical operations in the major urban areas where the use of this spectrum is allowed. For example, the New York City Police Department (NYPD), the Los Angeles County Sheriff, and the Los Angeles City Police and Fire Departments, among others, rely on spectrum in the 470-512 MHz band for lifeline voice operations. Also, the band supports important enterprise and critical infrastructure land mobile operations that do not qualify for public safety status under the Commission's rules.

Currently, Public Safety and other land mobile users are allowed to deploy systems in eleven markets in this band.<sup>1</sup> In each city, only portions of the 470-512 MHz band are identified for sharing. In addition, the area around each of the eleven cities within which public safety and other land mobile operations are allowed to operate under the rules is limited in key two ways.

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<sup>1</sup> The original rules envisioned 470-512 MHz band operations in thirteen metros, however, agreement was never reached with Canada to allow such operations in the Detroit and Cleveland areas.

First, public safety and land mobile operations are limited by overall maximum distances from city centers. The rules limit the location of land mobile base stations to within a maximum of 80 kilometers (50 miles) from the center of each city and mobiles may operate over a maximum radius of 48 kilometers (30 miles) around their associated base stations.<sup>2</sup> Second, spacing criteria in the rules relative to co-channel or adjacent channel television stations often further reduce the areas within which public safety or other land mobile licensees may operate. These spacing criteria are based on a 50 dB desired-to-undesired (D/U) ratio for co-channel situations, except in the New York area, where a somewhat less conservative D/U ratio of 40 dB has been used successfully for over 35 years for channel 15. For adjacent channels, a 0 dB D/U ratio is used to set the spacing. The various technical issues to be resolved will be considered in the following sections of this petition.

#### **Contour Protection Ratios**

The Commission has already considered and adopted a different protection level of DTV operations and relaxed standards for protection of analog television stations. Section 90.545 of rules provides protection criteria for digital and analog television channels 62-65 and 67-69 from Public Safety operations in 769-775 MHz and 799-805 MHz (television channels 63-64 and 68-69). The same R-6602 propagation curves are used for television channels 14-20, thus it is reasonable to assume that the same standards should be applicable to channels 14-20. Section 90.545(a) reads as follows:<sup>3</sup>

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<sup>2</sup> Public safety operations in the New York metro area have slightly different geographic limitations as defined in 90.303(c) of the rules.

<sup>3</sup> Service contours for DTV stations are calculated as F(50,90) values. Service contours for analog television stations are calculated as F(50,50) values. All interference contours are F(50,10). The Commission found that the contour levels it adopted for DTV provided equivalent protection to analog television. It should also be noted that contours for Class A, translator, and

(a) D/U ratios. Licensees of public safety stations must choose site locations that are a sufficient distance from co-channel and adjacent channel TV and DTV stations, and/or must use reduced transmitting power or transmitting antenna height such that the following minimum desired signal to undesired signal ratios (D/U ratios) are met:

(1) The minimum D/U ratio for co-channel stations is 40 dB at the hypothetical Grade B contour (64 dBmV/m) (88.5 kilometers or 55.0 miles) of the TV station or 17 dB at the equivalent Grade B contour (41 dBmV/m) (88.5 kilometers or 55.0 miles) of the DTV station.

(2) The minimum D/U ratio for adjacent channel stations is 0 dB at the hypothetical Grade B contour (64 dBmV/m) (88.5 kilometers or 55.0 miles) of the TV station or -23 dB at the equivalent Grade B contour (41 dBmV/m) (88.5 kilometers or 55.0 miles) of the DTV station.

NPSTC recommends that the same protection criteria be adopted for all land mobile operations in television channels 14-20.<sup>4</sup> NPSTC generally concurs with the other technical standards contained in Section 90.545(b), except that handheld power should be raised to five watts, as simplex operations are more common in this band than in the 700 MHz public safety band.

#### **TV Protection / Distance Separations**

NPSTC believes the transition to digital television provides an opportunity to reduce the spacing between land mobile and television stations in the 470-512 MHz band and correspondingly to expand the area around each of the eleven markets where public safety and other land mobile users could locate licensed operations. Notably, in adopting rules for the 700 MHz band, the Commission has already studied some of the issues that would pertain to such a relaxation at 470-512 MHz.

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low power television are 10 dB higher than for full service stations, ie 51 dBuV/m F(50,90) for DTV contours and 74 dBuV/m F(50,50) for analog stations.

<sup>4</sup> NPSTC notes that all full power television stations will be DTV only, meaning that the protection ratios for analog television signals would apply only to those Class A, translator, and low power television stations that continue to broadcast with an analog signal. Within the land mobile operational areas in the eleven markets, translator and low power television operations would be secondary and not entitled to any protection. Contour protection would be afforded Class A, translator, and low power television stations if the land mobile operations were operating by waiver outside the eleven specified cities.

Once again, the FCC has already developed an appropriate rule to minimize mutual interference between television stations and land mobile operations. Section 90.545(c)(1) provides three options for showing protection to television stations. The rule section reads as follows:

(1) Licensees of stations operating within the ERP and HAAT limits of paragraph (b) must select one of three methods to meet the TV/DTV protection requirements, subject to Commission approval:

- (i) utilize the geographic separation specified in the tables referenced below [Tables B and E of Section 90.309];
- (ii) submit an engineering study justifying the proposed separations based on the parameters of the land mobile station and the parameters, including authorized and/or applied for facilities, of the TV/DTV station(s) it is trying to protect; or,
- (iii) obtain written concurrence from the applicable TV/DTV station(s). If this method is chosen, a copy of the agreement must be submitted with the application.

NPSTC fully supports the above procedures. While we believe that the distances in Tables B and E of Section 90.309 are excessive for protection of digital television stations, the options to submit an engineering study or obtain concurrence from the affected television station mitigate the Tables. NPSTC also supports the geographic separation methods contained in Section 90.545(c)(2).

#### **Land Mobile Area of Operation**

With the growth of the eleven markets in which land mobile operations are permitted on UHF television bands, the 80 kilometer (50 mile) restriction has some undesired consequences. Suburban areas around these cities, that may well be part of the economy of the cities, may be excluded from land mobile operations. Although public safety entities have sometimes been successful in obtaining waivers to operate outside the specified radius, other users rarely prevail in a waiver request. Even for public safety, the burden of a waiver adds considerably to the complexity of applications for license. Even worse, such waivers are generally granted on a

secondary basis, leaving the public safety entity subject to being removed from the air by a new television facility subsequently authorized.

The real issue is not so much the distance from city center in which land mobile operations can occur, the issue is protection of incumbent television stations. NPSTC recommends that the land mobile base station area of operation be extended from 80 kilometers (50 miles) to 128 kilometers (80 miles) around each city. This will provide greater flexibility for the land mobile operations while assuring continued protection for incumbent television operations. Land mobile operations in the expanded areas would be required to provide the appropriate protection to incumbent television stations<sup>5</sup>

NPSTC believes that there is another situation that should be corrected. Baltimore, Maryland, is considered to be part of the Washington, DC, area. This has a particularly negative impact on use of television channels north and east of Baltimore, as the 80 kilometer radius is based on coordinates in the District of Columbia. NPSTC recommends that Baltimore be included as a separate city with the same channels currently assigned to the Baltimore/Washington area. Baltimore should be added to the list of cities in Section 73.623(e) and 74.709(a).

NPSTC also recommends that Public Safety entities be given access to the first 300 kHz of each channel (base and mobile segments) without the need for a waiver. For most channels, this spectrum has been allocated for common carrier use. NPSTC believes that this band is lightly used by common carriers and could provide valuable new spectrum for public safety

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<sup>5</sup> NPSTC's primary concern is relief for public safety operations. However, we note that NPSTC's recommendations would also provide useful relief to other land mobile users. In its recent 900 MHz Report and Order, the Commission recognized that there are very limited opportunities for these land mobile users so providing some additional relief in the 470-512 MHz band would be in the public interest for both public safety and enterprise entities.

systems. In a number of cases, especially in the New York/New Jersey area, waivers have been issued for public safety use of these segments. This rule change would permit access to the band segments without the need for a waiver.

### **In-Market Land Mobile Operations**

Section 90.311(a)(2) currently requires that a channel be used in either the Public Safety or Business radio service throughout the urbanized area. This artificially limits channel availability. Especially if the service radius is expanded to 128 kilometers (80 miles) there will be numerous opportunities for sharing of the same channel between both radio service user groups.

NPSTC recommends that the rule section be modified to allow use by mixed services as long as the 21 dBuV/m F(50,10) interference contour of the proposed station does not overlap the 39 dBuV/m service contour of an incumbent co-channel station. This is consistent with the concept of protected service area in Section 90.187(b) of the rules. Primary mobile areas of operation, however, would remain to within 32 km of their associated base or repeater stations. Mobile-only operations would be considered secondary and receive no protection.

### **Incumbent Television Stations**

Just as the Commission did in Docket 18261, it should freeze protected television stations to those licensed or with construction permits as of the date of adoption of its Order in this matter. NPSTC has provided a list of stations that would currently qualify for protection. The list should be included in the rules.

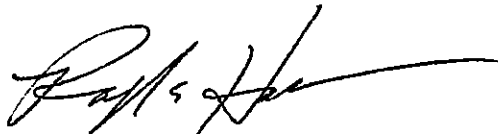
### **Conclusion**

NPSTC recommends the Commission move forward to address the recommendations herein on an expeditious basis. NPSTC requests the Commission to directly issue a Notice of



Proposed Rulemaking addressing modifications to the 470-512 MHz rules as proposed herein and handle the rule making in an expedited manner. Such an NPRM will provide all parties an adequate opportunity to address the issues NPSTC has raised without the delay incurred by first obtaining comments and replies on the Petition for Rulemaking and then requesting comments and replies later on the same issues again at the NPRM stage. With the imminent DTV transition, these rules are needed immediately and should already be in place. Moving forward with NPSTC's recommendations will provide greater flexibility for both public safety and enterprise licensees and applicants in the 470-512 MHz bands in eleven (twelve with Baltimore) top markets where that band can be shared for land mobile use without any negative impact on television viewing.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Ralph A. Haller", with a long horizontal flourish extending to the right.

Ralph A. Haller, Chair  
National Public Safety Telecommunications Council  
8191 Southpark Lane, Number 205  
Littleton, Colorado 80120-4641  
866-807-4755

February 13, 2009

## Appendix One

### Proposed Rule Changes

#### Part 90, Subpart L - Authorization in the Band 470-512 MHz (UHF-TV Sharing)

##### §90.301 Scope.

*Section 90.301 is unchanged.*

##### §90.303 Availability of frequencies.

*Section 90.303 is unchanged except that reference to DC/MD/VA is changed to only DC/VA and coordinates are added for Baltimore, MD as a 12<sup>th</sup> city.*

*Add:*

Baltimore, MD	39°17'11.7"	76°37'09.7"	488-494, 494-500	17, 18
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*Modify to remove MD:*

Washington, DC/VA	38°53'51.4"	77°00'31.9"	488-494, 494-500	17, 18
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##### §90.305 Location of stations.

*Subparagraph (a) is modified to show 128 km (80 miles).*

(a) The transmitter site(s) for base station(s), including mobile relay stations, shall be located not more than 128 km. (80 mi.) from the geographic center of the urbanized area listed in §90.303.

*Subparagraphs (b) and (c) are unchanged, except that references to "Table B" should be changed to "Table A" and references to "Figure B" should be changed to "Figure A." After the DTV transition, Subparagraph (c)(2) can be eliminated as the protected television station, WNEP, will be transitioning to channel 49 and no longer require protection on channel 16.*

*Subparagraph (d) is deleted as the "UHF taboos" apply only to analog television receivers and were developed before modern receiver technology eliminated the need for the taboos.*

##### §90.307 Protection criteria.

*Section 90.307 is completely replaced as follows:*

(a) D/U ratios. Site locations must meet the distance in Section 90.309 from co-channel and adjacent channel TV and DTV stations, and/or must use reduced transmitting power or

transmitting antenna height such that the following minimum desired signal to undesired signal ratios (*D/U ratios*) are met:

(1) The minimum *D/U* ratio for co-channel stations is 40 dB at the hypothetical Grade B contour (64 dBmV/m for full service analog TV or 74 dBmV/m for all other analog classes) (88.5 kilometers or 55.0 miles) of the TV station or 17 dB at the equivalent Grade B contour (41 dBmV/m for full service DTV or 51 dBmV/m for all other DTV classes) (88.5 kilometers or 55.0 miles) of the DTV station.

(2) The minimum *D/U* ratio for adjacent channel stations is 0 dB at the hypothetical Grade B contour (64 dBmV/m for full service analog TV or 74 dBmV/m for all other analog classes) (88.5 kilometers or 55.0 miles) of the TV station or -23 dB at the equivalent Grade B contour (41 dBmV/m for full service DTV or 51 dBmV/m for all other DTV classes) (88.5 kilometers or 55.0 miles) of the DTV station.

(b) Maximum ERP and HAAT. The maximum effective radiated power (ERP) and the antenna height above average terrain (HAAT) of the proposed land mobile base station, the associated control station, and the mobile transmitters shall be determined using the methods described in this section.

(1) Each base station is limited to a maximum ERP of 1000 watts.

(2) Each control station is limited to a maximum ERP of 200 watts and a maximum HAAT of 30.5 m. (100 ft).

(3) Each mobile station is limited to a maximum ERP of 50 watts and a maximum antenna height of 6.1 m. (20 ft.).

(4) Each portable (handheld) transmitter is limited to a maximum ERP of 5 watts.

(5) All transmitters are subject to the power reductions given in Figure A of §90.309 of this chapter, for antenna heights higher than 152 meters (500 ft), unless otherwise substantiated by a contour study.

(c) Methods. The methods used to calculate TV contours and antenna heights above average terrain are given in §§73.683 and 73.684 of this chapter. Tables to determine the necessary minimum distance from the land mobile station to the TV/DTV station, assuming that the TV/DTV station has a hypothetical or equivalent Grade B contour of 88.5 kilometers (55.0 miles), are located in §90.309 and labeled as Tables A, B, and C. Values between those given in the tables may be determined by linear interpolation.

(1) stations operating within the ERP and HAAT limits of paragraph (b) must select one of three methods to meet the TV/DTV protection requirements, subject to Commission approval:

- (i) utilize the geographic separation specified in the tables referenced below;
- (ii) submit an engineering study justifying the proposed separations based on the parameters of the land mobile station and the parameters, including authorized and/or applied for facilities, of the TV/DTV station(s) it is trying to protect; or,
- (iii) obtain written concurrence from the applicable TV/DTV station(s). If this method is chosen, a copy of the agreement must be submitted with the application.

(2) The following is the method for geographic separations.

- (i) Base stations having an antenna height (HAAT) less than 152 m. (500 ft.) shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the values specified in Table A (co-channel frequencies based on 40 dB protection) and Table C (adjacent channel frequencies based on 0 dB

protection) in §90.309 of this part. For base stations having an antenna height (HAAT) between 152-914 meters (500-3,000 ft.) the effective radiated power must be reduced below 1 kilowatt in accordance with the values shown in the power reduction graph in Figure B in §90.309 of this part. For heights of more than 152 m. (500 ft.) above average terrain, the distance to the radio path horizon will be calculated assuming smooth earth. If the distance so determined equals or exceeds the distance to the hypothetical or equivalent Grade B contour of a co-channel TV/DTV station (i.e., it exceeds the distance from the appropriate Table in §90.309 to the relevant TV/DTV station) an authorization will not be granted unless it can be shown in an engineering study (method 2) that actual terrain considerations are such as to provide the desired protection at the actual Grade B contour (64 dBmV/m for full service analog TV and 41 dBmV/m for full service DTV stations or 74 dBuV/m for all other classes of analog stations and 51 dBuV/m for all other classes of DTV stations), or that the effective radiated power will be further reduced so that, assuming free space attenuation, the desired protection at the actual Grade B contour will be achieved. Directions for calculating powers, heights, and reduction curves are listed in §90.309 for land mobile stations. Directions for calculating coverage contours are listed in §§73.683-685 for TV stations and in §73.625 for DTV stations.

(ii) Control and mobile stations (including portables) are limited in height and power and therefore shall afford protection to co-channel and adjacent channel TV/DTV stations in accordance with the values specified in Table D (co-channel frequencies based on 40 dB protection) in §90.309 of this part and a minimum distance of 8 kilometers (5 miles) from all adjacent channel TV/DTV station hypothetical or equivalent Grade B contours (adjacent channel frequencies based on 0 dB protection for TV stations and -23 dB for DTV stations). Since mobiles and portables are able to move and communicate with each other, licensees or coordinators must determine the areas where the mobiles can and cannot roam in order to protect the TV/DTV stations, and advise the mobile operators of these areas and their restrictions.

(iii) In order to protect certain TV/DTV stations and to ensure protection from these stations which may have extremely large contours due to unusual height situations, an additional distance factor must be used for all land mobile base, control and mobile stations. For all co-channel and adjacent channel TV/DTV stations which have an HAAT between 350 and 600 meters, public safety stations must add the following DISTANCE FACTOR to the value obtained from the referenced Tables in §90.309 and to the distance for control and mobile stations on adjacent TV/DTV channels (96.5 km).

DISTANCE FACTOR = (TV/DTV HAAT-350) , 14 in kilometers, where HAAT is the TV or DTV station antenna height above average terrain obtained from its authorized or proposed facilities, whichever is greater.

(iv) For all co-channel and adjacent channel TV/DTV stations which have an antenna height above average terrain greater than 600 meters, land mobile stations must add 18 kilometers as the DISTANCE FACTOR to the value obtained from the referenced Tables in §90.309 and to the distance for control and mobile stations on adjacent TV/DTV channels (96.5 km).

NOTE to §90.307: The 88.5 km (55.0 mi) Grade B service contour (64 dBmV/m) is based on a hypothetical TV station operating at an effective radiated power of one megawatt, a transmitting antenna height above average terrain of 610 meters (2000 feet) and the Commission's R-6602 F(50,50) curves. See §73.699 of this chapter. Maximum facilities for TV stations operating in the UHF band are 5 megawatts effective radiated power (1 megawatt for DTV stations) at an antenna HAAT of 610 meters (2,000 feet). See §73.614 of this chapter. The equivalent contour for DTV stations is based on a 41 dBmV/m signal strength and the distance to the F(50,90) curve. See §73.625 of this chapter.

(d) The minimum distance between a land mobile base station which has associated mobile units and a protected adjacent channel television station is 145 km (90 miles) unless a closer distance is substantiated by a contour study.

#### **§90.309 Tables and figures.**

*Section 90.309 is modified by removing the current Tables A and C. Table B is renamed Table A. Table D is renamed Table B. Table E is renamed Table C. Table F is renamed Table D. Figure A is deleted and Figure B is renamed Figure A. Text is also changed appropriately, as follows:*

(a) Directions for using the tables.

(1) Using the method specified in §1.958 of this chapter, determine the distances between the proposed land mobile base station and the protected co-channel television station and between the proposed land mobile base station and the protected adjacent channel television station. If the exact mileage does not appear in table A for protected co-channel television stations or table C for protected adjacent channel television stations, the next lower mileage separation figure is to be used.

(2) Entering the proper table at the mileage figure found in paragraph (a)(1) of this section, find opposite, a selection of powers that may be used for antenna heights ranging from 15 m (50 ft) to 152.5 m (500 feet) (AAT). If the exact antenna height proposed for the land mobile base station does not appear in the proper table, use the power figure beneath the next greater antenna height.

(3) The lowest power found using the tables mentioned in paragraphs (a)(1) and (a)(2) of this section is the maximum power that may be employed by the proposed land mobile base station, using the geographic separation method.

(4) In determining the average elevation of the terrain, the elevations between 3.2 kilometers (2 miles) and 16 kilometers (10 miles) from the antenna site are employed. Profile graphs shall be drawn for a minimum of eight radials beginning at the antenna site and extending 16 kilometers (10 miles). The radials should be drawn starting with true north. At least one radial should be constructed in the direction of the nearest co-channel and adjacent channel UHF television stations. The profile graph for each radial shall be plotted by contour intervals of from 12.2 meters (40 feet) to 30.5 meters (100 feet) and, where the data permits, at least 50 points of elevation (generally uniformly spaced) should be used for each radial. For very rugged terrain, 61 meters (200 feet) to 122 meters (400 foot) contour intervals may be used. Where the terrain is uniform or gently

sloping, the smallest contour interval indicated on the topographic chart may be used. The average elevation of the 12.8 kilometer (8 mile) distance between 3.2 kilometers (2 miles) and 16 kilometers (10 miles) from the antenna site should be determined from the profile graph for each radial. This may be obtained by averaging a large number of equally spaced points, by using a planimeter, or by obtaining the median elevation (that exceeded by 50 percent of the distance) in sectors and averaging those values. In the preparation of the profile graphs, the elevation or contour intervals may be taken from U.S. Geological Survey Topographic Maps, U.S. Army Corps of Engineers Maps, or Tennessee Valley Authority Maps. Maps with a scale of 1:250,000 or larger (such as 1:24,000) shall be used. Digital Terrain Data Tapes, provided by the National Cartographic Institute, U.S. Geologic Survey, may be utilized in lieu of maps, but the number of data points must be equal to or exceed that specified above. If such maps are not published for the area in question, the next best topographic information should be used. Automated propagation software may also be used if the map detail is at least 3 arc-sec.

(5) Applicants for base stations in the Miami, Fla., urbanized area may, in lieu of calculating the height of average terrain, use 3 m (10 feet) as the average terrain height.

(b) Directions for Using the Figures.

- (1) Determine antenna height above average terrain. (According to §90.309(a)(4).)
- (2) Locate this value on the antenna height axis.
- (3) Determine the separation between the LM antenna site and the nearest protected co-channel TV station. (According to §73.611.)
- (4) Draw a vertical line to intersect the LM/TV separation curve at the distance determined in step 3 above. For distances not shown in the graph use linear interpolation.
- (5) From the intersection of the LM/TV separation curve draw a horizontal line to the power reduction scale.
- (6) The power reduction in dB determines the reduction below 1 kW that must be achieved.
- (7) See Table D for dB/power equivalents.

**§90.311 Frequencies.**

*Section 90.311(a) is unchanged except that New York City is added to channel 16 for public safety use and Baltimore, MD, is added to channels 17 and 18, with MD being deleted from the DC/MD/VA entries. Additionally the following is added to paragraph (a).*

(Notwithstanding the frequency limits shown below, Public Safety entities may apply for frequencies in the first 300 kHz of base and mobile portions of each television channel without waiver.)

**§90.313 Frequency loading criteria.**

*Section 90.313(a) and (b) are unchanged. Section 90.313(c) is modified as follows:*

(c) A unit is defined as a mobile transmitter-receiver. Loading standards will be applied in terms of the number of units actually in use or to be placed in use within 8 months following

authorization. A licensee will be required to show that an assigned frequency pair is at full capacity before it may be assigned a second or additional frequency pair. Channel capacity may be reached either by the requirements of a single licensee or by several users sharing a channel. Until a channel is loaded to capacity it will be available for assignment to other users in the same area. A frequency pair may be reassigned at distances 64 km (40 mi.) or more (32 km. (20 mi)) for Channel 15, Chicago; Channel 20, Philadelphia; and Channel 17, Washington), from the location of base stations authorized on that pair without reference to loading at the point of original installation. Mobile operations in excess of 32 km from their associated base station will be considered secondary, even if the channel is fully loaded. Following authorization, the licensee shall notify the Commission either during or at the close of the 12-month period of the number of units in operation

**§90.315 Special provisions governing use of frequencies in the 476-494 MHz band (TV Channels 15, 16 and 17) in the Southern Louisiana-Texas Offshore Zone.**

*Section 90.315 is unchanged.*

**§90.317 Fixed ancillary signaling and data transmissions.**

*Section 90.317 is unchanged.*

*Section 90.319 is added as follows:*

**§90.319 Protected Digital Television Stations**

The following television stations must be protected by 1) the distance method, 2) the contour method, or 3) by concurrence.

**Channel 14:**

Boston, MA:	WPTZ-DT	44-31-32.0	072-48-58.0	Co-channel (14)
	WVII-DT	44-45-35.0	098-34-01.0	Co-channel (14)
	None Adjacent Channel			
Chicago, IL:	WOBC-CA	42-17-17.0	085-09-54.0	Co-channel (14)
	WTIU-DT	39-08-30.8	086-29-42.9	Co-channel (14)
	WXSP-CA	43-13-03.0	089-29-13.0	Adj Chan (15)
Los Angeles, CA:	None Co-channel			
	None Adjacent Channel			
Miami, FL:	WRDQ-DT	28-34-07.0	081-03-16.0	Co-channel (14)
	WBBH-DT	26-49-21.0	081-45-54.0	Adj. Chan (15)
New York:	WSPX (AL)	43-18-18.0	076-03-00.0	Co-channel (14)

Pittsburgh, PA:	WCMH-DT	39-58-16.0	083-01-40.0	Co-channel (14)
	WUTV-DT	43-01-32.0	078-55-43.0	Co-channel (14)
	WPSX-DT	41-07-20.0	078-26-29.8	Adj. Chan (15)
	WEWS-DT	41-22-26.0	081-43-04.0	Adj. Chan (15)

**Channel 15:**

Chicago, IL:	WXSP-CA	43-13-03.0	089-29-13.0	Co-channel (15)
	WSEC-DT	39-39-09.0	090-02-47.0	Co-channel (15)
	WOBC-CA	42-17-17.0	085-09-54.0	Adj Chan (14)
	WTOV-DT	42-17-14.0	089-10-15.0	Adj Chan (16)

Los Angeles, CA:	KSBY-DT	35-21-37.0	120-39-18.0	Co-channel (15)
	KTFB-CA	35-26-20.0	118-44-24.0	Adj Chan (16)

New York, NY:	WNYA-CA	42-38-12.0	073-59-45.0	Co-channel (15)
	WSPX-DT	43-18-18.0	076-03-00.0	Co-channel (15)
	WFDC-DT	38-59-24.0	077-04-54.0	Co-channel (15)
	No Adjacent Channel			

**Channel 16:**

Boston, MA:	None Co-channel			
	WCBB(DT)	44-09-15.0	070-00-37.0	Adj Chan (17)
	WPZQ-DT	41-29-41.0	071-47-06.0	Adj Chan (17)

Dallas/Ft Worth, TX:	None Co-channel			
	None Adjacent Channel			

Los Angeles, CA:	KTFB-CA	35-26-20.0	118-44-24.0	Co-channel (16)
	KSWT-DT	33-03-17.0	114-49-34.0	Co-channel (16)
	KSBB (DT)	34-24-37.0	119-42-26.0	Adj. Chan (17)

New York:	No Co-channel			
	WNYA-CA	42-38-12.0	073-59-45.0	Adj. Chan (15)
	WPHL-DT	40-02-30.0	075-15-23.0	Adj. Chan (17)
	WPXQ-DT	41-29-41.0	071-47-06.0	Adj. Chan (17)

San Francisco, CA:	No Co-channel			
	KBSV-DT	37-35-21.0	120-57-23.0	Adj. Chan (15)
	KMUM-CA	38-42-28.0	121-28-32.0	Adj. Chan (15)

**Channel 17:**

Baltimore, MD:	WPHL-DT	40-02-30.0	075-14-23.0	Co-channel (17)
	WKTD-CA	36-49-14.0	076-30-41.0	Co-channel (17)
	None Adjacent Channel			

Houston, TX:	None Co-channel			
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### None Adjacent Channel

San Francisco, CA:	No Co-channel			
	KUVS-DT	38-07-07.0	120-43-27.0	Adj. Chan (18)
Washington, DC:	WPHL-DT	40-02-30.0	075-14-23.0	Co-channel (17)
	WKTD-CA	36-49-14.0	076-30-41.0	Co-channel (17)
	WFXR-DT	37-11-47.3	080-09-15.5	Co-channel (17)
	WJAL-DT	36-53-25.0	077-58-04.0	Adj. Chan (16)

### Channel 18:

Baltimore, MD:	WMBC-DT	41-51-53.0	074-12-03.0	Co-channel (18)
	WETM-DT	42-06-22.0	076-52-17.0	Co-channel (18)
	WPHL-DT	40-02-30.0	075-14-23.0	Adj. Chan (17)
	WCAV-DT	37-59-03.0	078-28-52.0	Adj. Chan (19)
Pittsburgh, PA:	WETM-DT	42-06-22.0	076-52-17.0	Co-channel (18)
	WKYC-TV	41-23-10.0	081-41-21.0	Adj. Chan (17)
Washington, DC:	WMBC-DT	41-51-53.0	074-12-03.0	Co-channel (18)
	WDBJ-DT	37-11-42.0	080-09-23.0	Co-channel (18)
	WPHL-DT	40-02-30.0	075-14-23.0	Adj. Chan (17)
	WKTD-CA	36-49-14.0	076-30-41.0	Adj. Chan (17)
	WCAV-DT	37-59-03.0	078-28-52.0	Adj. Chan (19)

### Channel 19:

Philadelphia, PA:	WRDM-CA	41-47-48.0	072-47-52.0	Co-channel (19)
	WMBC-DT	40-51-53.0	074-12-03.0	Adj. Chan (18)

### Channel 20:

Los Angeles, CA:	None Co-channel			
	KSWB-DT	32-41-47.0	116-56-07.0	Adj. Chan (19)
	KCOY-DT	34-54-37.0	120-11-09.0	Adj. Chan (19)
	KPMR-DT	34-31-28.0	119-57-35.0	Adj. Chan (21)
Philadelphia, PA:	WTXX	41-42-13.0	072-49-57.0	Co-channel (20)
	WBOC-DT	38-30-17.0	075-38-37.0	Adj. Chan (21)
	WLIW-DT	40-47-19.0	073-27-09.0	Adj. Chan (21)

### Changes to Television Rules, Parts 73 and 74

Sections 73.623(e) and 74.709(b). Baltimore should be added to the list of cities.